WHAT IS CLAIMED IS:

1. A semiconductor device comprising:

a semiconductor region containing silicon and germanium and including a germanium low-concentration region containing germanium of low concentration and a germanium high-concentration region containing germanium of high concentration,

a P-type diffusion layer formed in said semiconductor region,

an N-type diffusion layer formed in said semiconductor region, a boundary region between said P-type diffusion layer and said N-type diffusion layer being disposed in the germanium high-concentration region, and

a silicide film formed to extend from said N-type diffusion layer over to the boundary region and said P-type diffusion layer.

2. The device according to claim 1, wherein said P-type diffusion layer is formed in the germanium high-concentration region.

3. The device according to claim 1, wherein a boundary between the germanium low-concentration region and the germanium high-concentration region lies in said N-type diffusion layer.

4. The device according to claim 1, wherein the boundary region has an impurity mixture region containing N-type and P-type impurities.

5. The device according to claim 1, wherein the boundary region has a contact region in which said N-type diffusion layer and said P-type diffusion layer are formed in contact with each other.

6. The device according to claim 1, wherein the boundary region has an undoped region containing no N-type and P-type impurities.

7. The device according to claim 1, wherein thickness of a portion of said semiconductor region in which the germanium high-concentration region exists is smaller than thickness of a portion of said semiconductor region in which the germanium low-concentration region exists.

8. The device according to claim 1, wherein concentration of germanium of the germanium low-concentration region is set to make maximum an activation rate of the N-type impurities contained in said N-type diffusion layer and concentration of germanium of the germanium high-concentration region is set to exceed the concentration which causes the activation rate to be maximum.

9. The device according to claim 1, wherein concentration of germanium of the germanium high-concentration region exceeds 30 mol%.

10. The device according to claim 1, wherein said semiconductor region is gate electrodes of P-channel and N-channel insulated gate field effect transistors.

11. The device according to claim 10, wherein said P-type diffusion layer is the gate electrode of the P-channel insulated gate field effect transistor and said N-type diffusion layer is the gate electrode of the N-channel insulated gate field effect transistor.

12. The device according to claim 1, wherein said semiconductor region is an element region.

13. The device according to claim 12, wherein one of said N-type and P-type diffusion layers is a source/drain region of the insulated gate field effect transistor and the other of said N-type and P-type diffusion layers is a contact region electrically connected to a back-gate region of the insulated gate field effect transistor.

14. A method of manufacturing a semiconductor device comprising:

forming a germanium low-concentration region containing germanium of low concentration and a germanium high-concentration region containing germanium of high concentration in a semiconductor region containing at least silicon,

forming P-type and N-type diffusion layers in the semiconductor region with a boundary region between the above diffusion layers being set in the germanium high-concentration region, and

forming a silicide film which extends from the N-type diffusion layer over to the boundary region and

the P-type diffusion layer.

15. The method according to claim 14, wherein the germanium low-concentration region and the germanium high-concentration region are formed by oxidizing a selected portion of the semiconductor region when the semiconductor region contains germanium.

16. The method according to claim 15, wherein the germanium high-concentration region is formed in the selected portion and the germanium low-concentration region is formed in a portion other than the selected portion.

17. The method according to claim 14, wherein the P-type diffusion layer is formed in the germanium high-concentration region.

18. The method according to claim 14, wherein a natural oxide film is removed before the silicide film is formed.

19. The method according to claim 18, wherein an etchant containing hydrofluoric acid is used to remove the natural oxide film.

20. A method of manufacturing a semiconductor device comprising:

forming a P-type semiconductor region in which a first transistor is formed and an N-type semiconductor region in which a second transistor is formed on a substrate,

forming a semiconductor film containing at least

silicon on the P-type and N-type semiconductor regions,

forming a germanium low-concentration region containing germanium of low concentration on the P-type semiconductor region and a germanium high-concentration region containing germanium of high concentration on the N-type semiconductor region in the semiconductor region,

patterning the semiconductor region into an electrode pattern of the first transistor on the P-type semiconductor region and into an electrode pattern of the second transistor on the N-type semiconductor region,

respectively forming N-type and P-type diffusion layers in the P-type and N-type semiconductor regions and disposing the P-type and N-type diffusion layers in the electrode patterns with a boundary region between the above diffusion layers being set in the germanium high-concentration region, and

forming a silicide film on the N-type diffusion layer in the P-type semiconductor region and the P-type diffusion layer in the N-type semiconductor region, the silicide film being formed to extend from the N-type diffusion layer in the electrode pattern over to the boundary region and the P-type diffusion layer.